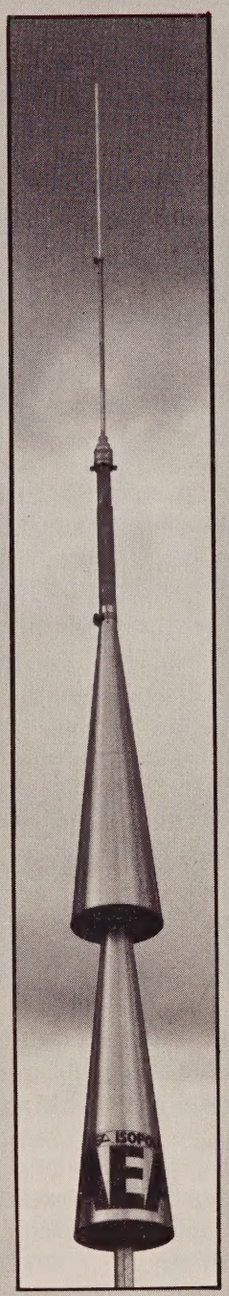
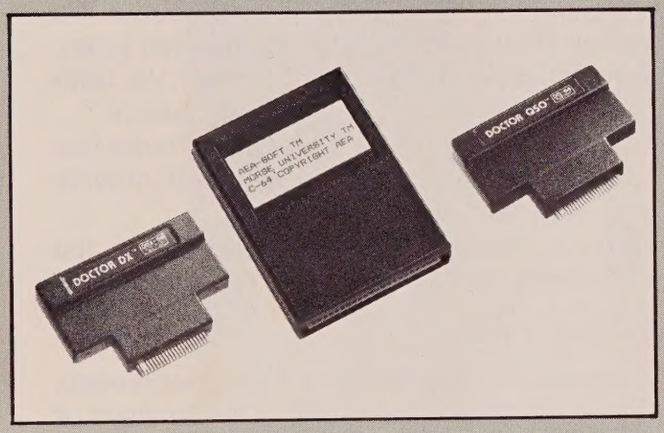
NEWSFLASH
F.C.C. Increases
Amateur Privileges
See Page 4

FREE ANTENNA
SEE SPECIAL OFFER
ON BACK PAGE

Pakratt™ Model PK-232

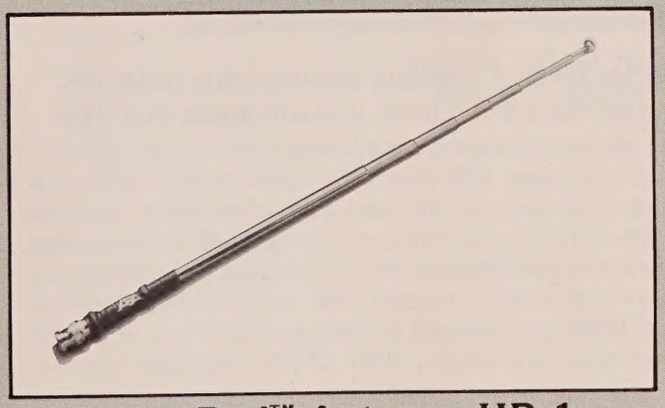


Pakratt™ Model PK-64



Simulator/Training Programs

Pakratt Model PK-87



Hot Rod™ Antenna HR-1

Computer Patch™ Model CP-100

ADVANCED ELECTRONIC APPLICATIONS, INC.

P.O. Box 2160
Lynnwood, Washington 98036 USA

206-775-7373

From the desk of N7ML

Dear Fellow Amateurs,

1987 marks AEA's tenth anniversary in designing, manufacturing, and marketing Amateur Radio products. We at AEA are proud to have contributed to the many advancements Amateur Radio has made in the last ten years.

The next few years promise to bring many more exciting times to the active Amateur Radio Operator. We have even seen the bottom of the last sunspot cycle and are experiencing improving conditions on the HF bands.

If you have been inactive the last few years, check out all the fun you have been missing! Amateur Radio has been changed drastically by the computer revolution. RTTY, AMTOR, Morse, and Packet data modes will provide you with more fun than you can imagine and a learning experience you will treasure.

If you are a Novice class licensee, brace yourself for the Novice Enhancement program. Under the enhancements planned you are given voice and data communication privileges. See the ARRL letter on page four of this catalog for more details.

AEA in ten short years has gained a reputation for providing "simply sophisticated" equipment that represents the best value for your dollar. Our designs are based on sound engineering practices that will assure you years of trouble-free use. You might find lower cost products, but I promise you will not find a better value in quality, product features, applications help, and speedy service.

Please take a few minutes to review the products in this catalog. While AEA markets several other products, we believe the ones in this brochure give a good representation of our product line. I think you will agree that AEA specializes in products that make Amateur Radio fun and exciting.

Sincerely,

Mike Lamb

C. Michael Lamb, President

P.S. Don't miss the back cover offer of a free Hot Rod antenna with the purchase of most AEA products.

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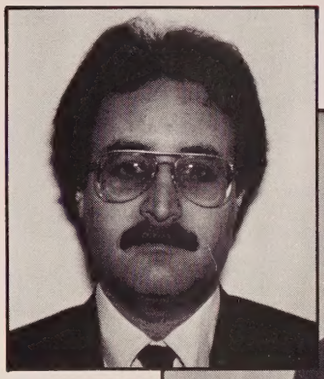
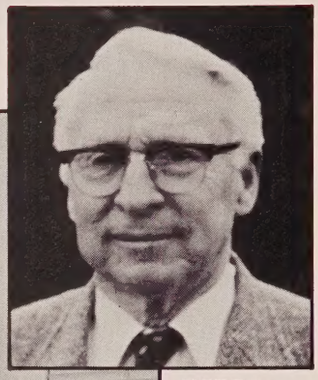
All AEA Products carry a 90 day Warranty on parts and labor.
Specifications and Prices subject to change without notice or obligation.

Ten Years of Breakthroughs
218 Years of Experience



N6IA



K7DBA

Standing left to right - N7ML, KB7B, KA7TVC, KZ7G, N7EZJ
Seated - K6RFK, N7BTI, KA7ENP, W2JUP not pictured.

Every AEA product gives you something you can't buy at any price...Experience. With over 218 years of combined amateur experience AEA has the knowledge, skill, and dedication to build products you'll be proud to own. There are licensed amateurs involved in every step of our product design, manufacture, and support. From the President N7ML, to our Vice President of Engineering, K6RFK, to the Service Manager, KZ7G, AEA knows the importance of building products you can depend on for years of enjoyment.

Innovations like the ISOPOLE Antenna, Doctor DX and Doctor QSO simulators, and the multi-mode PK-64 and PK-232, have given AEA the reputation of bringing you the breakthroughs. Each of these products, and many others, prove AEA is dedicated to the philosophy of "advancement of the radio art."

AEA is celebrating a milestone in 1987. It's our tenth year of providing products for the amateur community. We want to thank you for helping us grow from a few ideas over a kitchen table to a multi-million dollar business selling products around the world. It's taken lots of hard work, imagination, and customer support for AEA to grow the last ten years. With your continued support our staff of experienced amateurs will bring more breakthroughs into your station in the years to come.

BRINGS YOU
THE BREAKTHROUGH!

Advanced Electronic Applications, Inc.
P.O. Box 2160
Lynnwood, Washington 98036 USA
206-775-7373

THE AMERICAN RADIO RELAY LEAGUE, INC.

INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

ADMINISTRATIVE HEADQUARTERS NEWINGTON, CONNECTICUT, U.S.A. 06111

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~~QST~~

OFFICIAL JOURNAL

February 1987

Dear Radio Amateur:

Novices and Technicians on ten-meter phone, RTTY, and packet?

Novices using FM repeaters?

The FCC has said YES to both questions. Effective 0001 UTC March 21, 1987, Novice and Technician licensees will enjoy these new operating privileges, and more.

When propagation conditions are good, the ten-meter band provides worldwide communication with low power. Even when conditions are not so good, the band often provides pleasant surprises. Novices and Technicians will be able to use 28.100-28.300 MHz for CW and digital modes (RTTY, AMTOR, and packet) and 28.300-28.500 MHz for SSB (and CW), maximum power 200 watts output.

There is a world wide beacon network now operating at 28.190-28.300 MHz which eventually will be consolidated in a smaller band segment. In the meantime, ARRL recommends that 28.100-28.150 MHz be used for RTTY, AMTOR, and packet; 28.150-28.190 MHz for CW; and 28.300-28.500 MHz for upper-sideband SSB (remember to keep your carrier frequency below 28.497 MHz so your upper sideband will be inside the band!).

For many Novices, the prospect of using FM repeaters and other modes, including packet communications, in the 222.01-223.91 MHz (25 watts maximum) and 1270-1295 MHz (5 watts maximum) bands is even more exciting than the new horizons opening on ten meters. Hand-held, mobile, and fixed station equipment is now available for the new bands, and there are many repeaters available — with more to come, for sure! Novices can't establish their own repeaters, but they can use repeaters licensed to and controlled by others. Of course, FM is not the only mode permitted in these bands; some amazing distances, far beyond line-of-sight, can be achieved using SSB and CW, and even television is permitted at 1270 MHz!

Through their national organization, the ARRL, U.S. radio amateurs have worked for two years to make these new privileges a reality. All present licensees will get them automatically, without further examination; future Novices will have to pass a 30-question examination covering the new privileges and will be examined by two examiners instead of just one. At the same time, the present written examination for Technician and General is being split in half, so a Novice upgrading to Technician will only have to pass a 25-question written exam and a future Technician upgrading to General will pass another 25-question exam in addition to the 13-word-per-minute Morse code test. Technicians licensed before the effective date of the new rules will not take the written exam to upgrade.

The new privileges will provide Novices with a taste of the great diversity of Amateur Radio, including public service communications. But there will still be plenty of reason to upgrade — for more reliable long-distance communications on the HF bands below 28 MHz, or to get on the popular two-meter band, for example.

Special thanks to AEA for providing this opportunity to bring you this exciting news!

73,

David Sumner

David Sumner, K1ZZ
Executive Vice President, ARRL

PK-87™ Packet Controller

More than TNC-2 Compatible

AMATEUR NET PRICE

$179.95

AEA Retail $199.95

With the introduction of the TAPR TNC 2 in April 1985 the Tucson group set a new standard for Packet only controllers. Now AEA brings you another breakthrough with the PK-87. While many manufacturers continue to sell clones of the TNC 2, AEA has improved on the TNC 2 program with several new software features.

The Host mode of the new PK-87 can be utilized to improve terminal program operation. AEA has a recommended list of programs for IBM, Apple, Radio Shack, and other computers that include split screen display, type ahead buffer, data storage and most of the features requested by Packet operators.

Four new commands in the PK-87 allow you to restrict the use of your station for both connects and as a digipeater. The Mailbox monitoring command allows monitoring without displaying the callsign headers, while standard monitoring includes both MFROM and MTO lists.

Software commands are used to select the terminal baud rate, the Packet baud rate (45-9600), and modem tones 1070/1270, 2025/2225, 1200/2200. While the PK-87 can be used for HF operation, AEA recommends the optional PM-1 packet modem for low band use.

Hardware improvements also make the PK-87 stand above the rest. In addition to standard Data Carrier Detect, Push to talk, Status, and Connect indicators, the PK-87 has front panel LEDs for operational mode (Converse, Transparent, Command) and multiple connects. The PK-87 uses a Zilog 8530 SCC for hardware HDLC. The Modem disconnect of the PK-87 guarantees compatibility with high speed modems in the future.

A new generation of Packet terminal node controllers began in 1987 with the new AEA PK-87. Join the Packet Radio revolution today. Contact your local AEA Authorized Dealer and order your new PK-87.

Specifications

Operating Mode
- AX.25V2L2 Packet (previous versions supported)
- Half/Full Duplex

Modem
- Input Sensitivity: 5 mvRMS
- Input Dynamic Range: 5 to 770 mvRMS
- Bypassable via Ext Modem connector for use with external modem
- Hardware Watch Dog Timer — 1 minute timeout
- Demodulator: AMD 7910 World Chip
- Modulator: Phase-continuous sinewave AFSK generator
- Modulator output level: 5-100 mvRMS, rear panel adjustable

Processor System
- Processor: Zilog Z80
- RAM: battery backed, 16K Bytes
- ROM:32K Bytes
- Hardware HDLC: Zilog 8530 SCC

Rear Panel Input/Out-put Connections
- Radio Interface: 5 pin; Receive audio, Transmit audio, PTT, Auxiliary squelch, Ground
- External Modem: 5 pin; Transmit data, Receive data, carrier detect, Clock, Ground
- Terminal Interface: RS-232C 25 pin DB25 connector
- Terminal data rates: 300, 1200, 2400, 4800, 9600 (with autobaud select)

Front Panel Indicators
- Indicators: Operational Mode; Converse, Transparent, Command, Send, Data Carrier Detect, STatus, Connect, Multiple Connect

Power Requirements
- +12 to +16 VDC @ 550ma, 2.1 mm power connector, center positive
- AC-1 120 VAC adapter supplied

Physical
- 9.4" x 5.74" x 1.8", 3 lbs.

PK-64™ Multimode Data Controller

AMATEUR NET PRICE
$219.95
AEA retail $259.95

$319.95 with High Frequency Modem option
$379.95 AEA retail

An Easy Education in Amateur Digital Modes

If you've never used a computer, or you're just learning, the PK-64 is the perfect data controller for you. The PK-64 lets you learn the computer while you're operating in five amateur digital modes. Menu driven software guarantees you'll be on the air in no time at all. The AEA PK-64 turns the Commodore 64 and your transceiver into a complete five mode transmit/receive Amateur data station. Work Morse, Baudot, ASCII, AMTOR, and Packet with this single unit that plugs directly into a Commodore 64, SX-64, 64-C, or 128 computer. All the necessary software is on ROM in the unit, so you don't need a disk drive or any other peripheral. The software program includes features you don't find in most terminal programs used for Packet operation.

Split Screen Display — All modes use a divided screen display for transmit/receive/status.

Multiple Connect on Packet — Easy to use multichannel operation.

Full Disk, Cassette, Printer Compatibility — Supports Commodore peripherals for data handling.

Ten Message/Command Buffers — Preprogram your own messages for retransmission with a simple command.

20K Byte QSO Buffer — Stores incoming data for easy storage or retransmission.

Level 2 Version 2 packet — Latest version of Packet protocol, fully compatible with earlier versions.

Disk Parameter Storage — Up to ten different parameter groupings can be stored for easy retrieval.

Built-In Frequency Counter — Makes self calibration of modem easy without test equipment.

Connect Alarm Siren — Adjustable volume alarm sounds when a packet link is established. (Uses monitor audio)

HFM-64 Enhanced Modem

The standard modem does not give satisfactory performance with CW receive and will not operate FM RTTY with the standard tone pair. With the optional HF Modem you'll get superior sensitivity and selectivity performance for HF operation on all modes. The HFM option features filtering of Mark and Space tones with independent four pole Chebyshev filters, and A.M. detection. The PK-64 can be purchased with the HFM option installed, or the option can be field installed. No soldering is necessary, and the variable threshhold and tuning indicator are included.

PK-64A Version

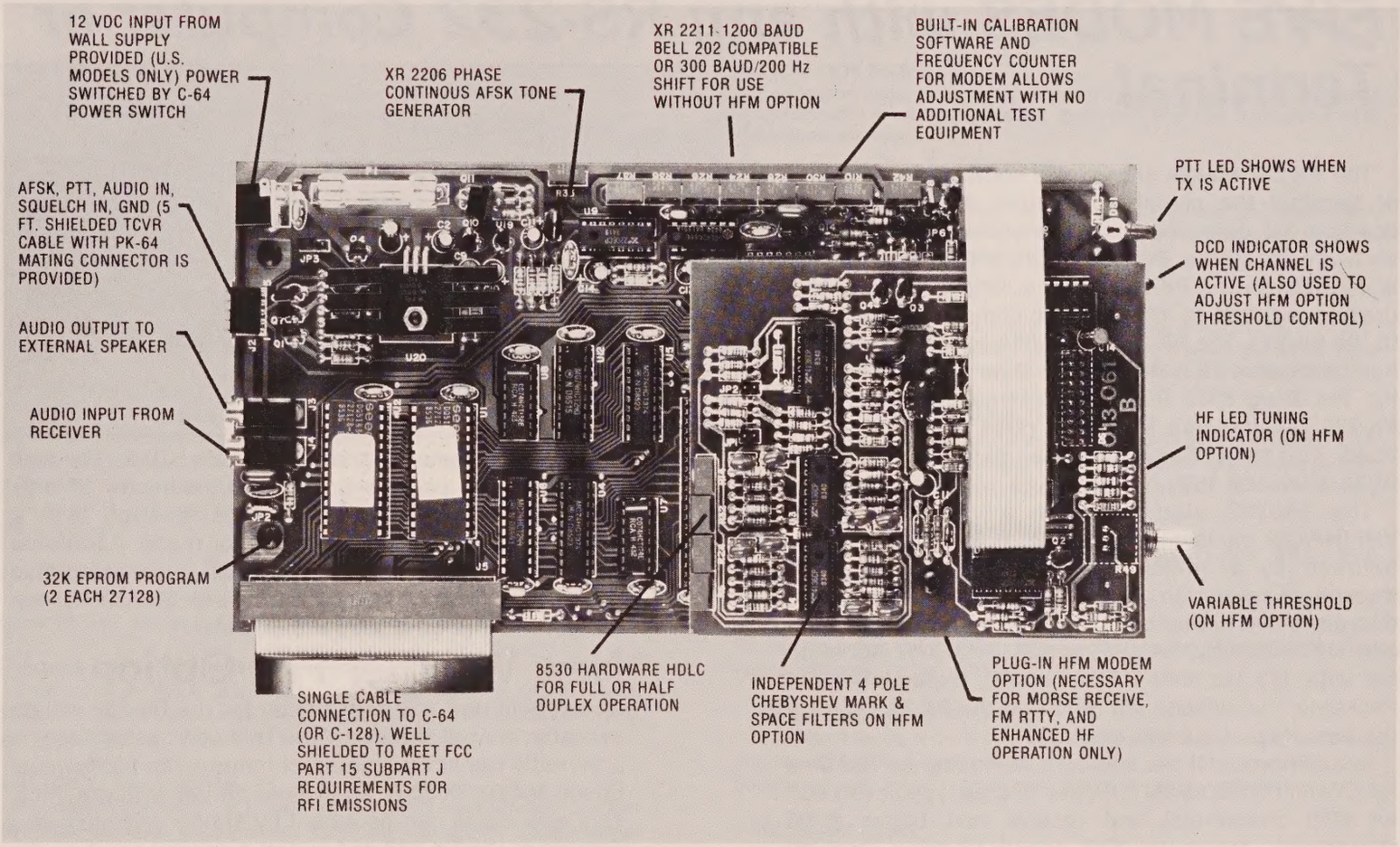
An enhanced version of the PK-64 is also available with a two foot long flexible computer cable replacing the standard nine inch ribbon cable connecting the PK-64 to the computer. The longer cable gives greater flexibility in placing the unit in the shack.

The PK-64A also includes the following software enhancements; QSO buffer enlarged to 36K, Transmit buffer doubled to 1026 characters, Multiple channel change without acknowledge, PTT indication on the display screen.

The PK-64A Amateur Net Price is $269.95, or $369.95 with the HFM option installed. AEA Retail is $319.95 and $429.95 with the HFM option installed.

No other unit, AEA or competitors, gives you the flexibility and ease of operation with the Commodore 64, SX-64, 64C, or 128. If you own one of the Commodore computers the PK-64 is the best unit you can buy. Call your AEA Authorized dealer today.

PK-64 Hardware Features


12 VDC INPUT FROM WALL SUPPLY PROVIDED (U.S. MODELS ONLY) POWER SWITCHED BY C-64 POWER SWITCH
XR 2206 PHASE CONTINOUS AFSK TONE GENERATOR
XR 2211 1200 BAUD BELL 202 COMPATIBLE OR 300 BAUD/200 Hz SHIFT FOR USE WITHOUT HFM OPTION
BUILT-IN CALIBRATION SOFTWARE AND FREQUENCY COUNTER FOR MODEM ALLOWS ADJUSTMENT WITH NO ADDITIONAL TEST EQUIPMENT
PTT LED SHOWS WHEN TX IS ACTIVE
AFSK, PTT, AUDIO IN, SQUELCH IN, GND (5 FT. SHIELDED TCVR CABLE WITH PK-64 MATING CONNECTOR IS PROVIDED)
DCD INDICATOR SHOWS WHEN CHANNEL IS ACTIVE (ALSO USED TO ADJUST HFM OPTION THRESHOLD CONTROL)
AUDIO OUTPUT TO EXTERNAL SPEAKER
AUDIO INPUT FROM RECEIVER
HF LED TUNING INDICATOR (ON HFM OPTION)
32K EPROM PROGRAM (2 EACH 27128)
VARIABLE THRESHOLD (ON HFM OPTION)
SINGLE CABLE CONNECTION TO C-64 (OR C-128). WELL SHIELDED TO MEET FCC PART 15 SUBPART J REQUIREMENTS FOR RFI EMISSIONS
8530 HARDWARE HDLC FOR FULL OR HALF DUPLEX OPERATION
INDEPENDENT 4 POLE CHEBYSHEV MARK & SPACE FILTERS ON HFM OPTION
PLUG-IN HFM MODEM OPTION (NECESSARY FOR MORSE RECEIVE, FM RTTY, AND ENHANCED HF OPERATION ONLY)

Specifications

Demodulator
- without HF modem - XR 2211 with a 6 pole bandpass filter and a 5 pole post detection low pass filter

Modulator
- Phase-continuous sinewave AFSK generator

Power Requirements
- + 12 to + 16 VDC @ 300,ma (390ma with HF modem)

Rear Panel Input/Output Connections
- Radio Interface - 5 pins, (receive audio, transmit audio, PTT, auxillary squelch, ground) 2.1. mm coaxial power connector, (center pin positive) 3.5mm phone jack for audio in and external speaker

Demodulator
- with HF modem - Dual 4 pole chebyshev filters plus a 5 pole post detection low pass filter

Modulator Output Level
- 0 - 125 mv RMS

Front Panel Control and Indicators
- Data Carriet Detect, Push to talk. Ten segment bargraph tuning indicator and threshold adjust control added with HF modem.

Physical
- 5½" x 9¾" x 2¼", 2 lbs.

AMATEUR NET PRICE
$319.95
AEA Retail 379.95

PK-232™ Multimode Data Controller

SIX* ~~FIVE~~ MODES with any RS-232 Computer or Terminal

The PK-232 makes any RS-232 compatible computer or terminal the complete Amateur digital operating position. All decoding, signal processing, and protocol software, for Morse, Baudot, ASCII, AMTOR, and Packet is on ROM in the PK-232. Only a simple terminal program is required to interface the computer or terminal to the PK-232. The PK-232 is a Z-80A based system and has hardware HDLC (High Level Data Link Control) using the Zilog 8530 SCC. The internal modem of the PK-232 can transmit Packet at rates from 24 to 1200 baud, with the option of using an external modem for 2400, 4800, and 9600 baud.

The PK-232 also includes a no compromise VHF/HF/CW modem with an eight pole bandpass filter followed by a limiter discriminator with automatic threshhold correction. Transmitter tones are low distortion sinewave phase continuous AFSK, Bell 202 Standard (1200-2200 Hz) for VHF, and 2110-2310 Hz (compatible with 170 Hz shift RTTY) for HF. Experienced HF Packeteers worldwide are reporting the PK-232 to have the best Packet modem available.

In addition to all the standard AEA program features for CW/RTTY/ASCII/AMTOR, like a large type ahead buffer (750 characters) and receive text buffer (2700 characters), automatic CW speed tracking, and all modes of AMTOR; you'll find lots of new features. The PK-232 software includes a computer host mode and the ability to transmit and receive raw HDLC. The new MBX (mailbox) parameter allows print/display of only the information portion of packets received from a Packet Bulletin Board in the monitor mode. Additional parameters (CFROM and CREJECT) give selectable connect privileges, and (DFROM and DREJECT) can restrict the station use as a digipeater.

*New Weather Fax Option

An exciting new low cost option for the PK-232 will be available in April, Weather Fax. This new option lets you print radio transmitted weather maps on an economical Epson MX-80/RX-80 or equivalent printer with graphics. This new mode can be added by simply changing two Eproms in the PK-232 and wiring a special cable to the printer. This option is compatible with all existing PK-232s.

Specifications

Modem
- Input Dynamic Range: 5mv to 500 mvRMS
- Bypassable via Ext Modem connector for use with external modem
- Hardware Watch Dog Timer — 1 minute timeout
- Onboard calibration software and hardware
- Demodulator: 8 pole bandpass filter, limiter, 4 pole discrimnator, 5 pole post detection low pass filter.
  - VHF Packet: 1700 Hz center frequency, 2600 Hz BW
  - HF (non CW): 2210 Hz center frequency, 450 Hz BW
  - CW: 800 Hz center frequency, 200 Hz BW
- Modulator: Phase continuous sinewave AFSK generator
- Modulator output level: 5-100 mvRMS, rear panel adjustable

Packet Protocol
- AX.25 V2L2 (previous versions supported)

Processor System
- Processor: Zilog Z80
- RAM: battery backed, 16KBytes
- ROM: 32KBytes, 48KBytes max
- Hardware HDLC: Zilog 8530 SCC

Rear Panel Input/Output Connections
- Radio Interfaces: Two 5 pin; front panel selectable (receive audio, transmit audio, PTT, Auxillary squelch, Ground)
- External Modem: 5 pin; Transmit data, Receive data, Carrier detect, Clock, Ground.
- FSK Outputs: normal and reverse
- Scope Outputs: Mark, Space
- CW Keying Outputs: +100VDC @ 100 ma max, or -30VDC @ 20 ma max
- Terminal Interface: RS-232-C 25 pin DB25 connector (pins 1-8 and 20 software and hardware handshake)
- Terminal data rates: 300, 1200, 2400, 4800, 9600 baud

Front Panel Controls and Indicators
- Controls: Power, Radio selector, Threshold adjust
- Indicators: Data Carrier Detect LED, 10 Segment HF Bargraph Tuning Indicator, Mode Indicators (Baudot, ASCII, PTT, Morse, Check, FEC, ARQ, Mode L, STBY), Status Indicators (STBY, Phase, Idle, ERROR/Conv, Over,

Power Requirements
- +12 to +16 VDC @ 700ma, 2.1 mm connector, center pin positive
- Reverse polarity protection (Internal lampfuse)
- Optional AC-4 VAC Adapter available

Physical
- 11" x 8.25" x 2.5", 3 lbs.

Your Best Choice In Multimode Controllers

• EASY EFFICIENT OPERATION
Twenty-one clearly-marked, unambiguous, front-panel LEDs continually display your operating mode and system status at all times. AEA's exclusive "Opmode" screen command displays full details of your current Operation mode - without changing modes - an essential feature for efficient and simple multi-mode operation.

• COMPREHENSIVE USER'S MANUAL
AEA's 240 page User's Manual "Quick Start" section helps you bring the PK-232 up quickly and easily. Professional-quality documentation with complete schematic diagrams and detailed parts lists provides a wealth of information on all operation modes for both the newcomer and the experienced operator.

• LOWER ERROR RATES
Critical on-the-air benchmarking proves the PK-232's internal modems are the best available in any multi-mode system!
— Under average operating conditions, data error rates are generally 30% better than competitive systems.
— In worst-case conditions, the PK-232 outperforms systems priced 10 times higher!

• FLEXIBLE TERMINAL SPEEDS
All standard ASCII terminal speeds are easily selected by keyboard command: 75, 110, 150, 200, 300, 600, 1200, 2400, and 9600 BPS.

• HIGHER LINK DATA RATES AVAILABLE
True hardware HDLC and keyboard-controlled data link speeds permit system operation and external modem applications at 300, 1200, 2400, 4800, and 9600 BPS. No DIP switches or jumpers to change.

• BATTERY · BACKED RAM
No need for "perming", ALL operating parameter values, beacon and connect message texts are saved and continually updated in battery-backed RAM.

• ADJUSTIBLE THRESHOLD CONTROL
Front-panel continually-variable 4-mode threshold control permits critical adjustment of effective modem sensitivity and "squelches" output of "garbage" to your screen or printer.

• GREATER FLEXIBILITY
Two independent, selectable rear-panel radio connection ports provides interchangable HF or VHF operation. Radio port selection is independent of data mode and speed.

• MODEM COMPATIBILITY
External modem connector, internal modem bypass and disconnect, hardware HDLC and digital data rates of up to 9600 BPS guarantee compatibility with inevitable radio modem advances.

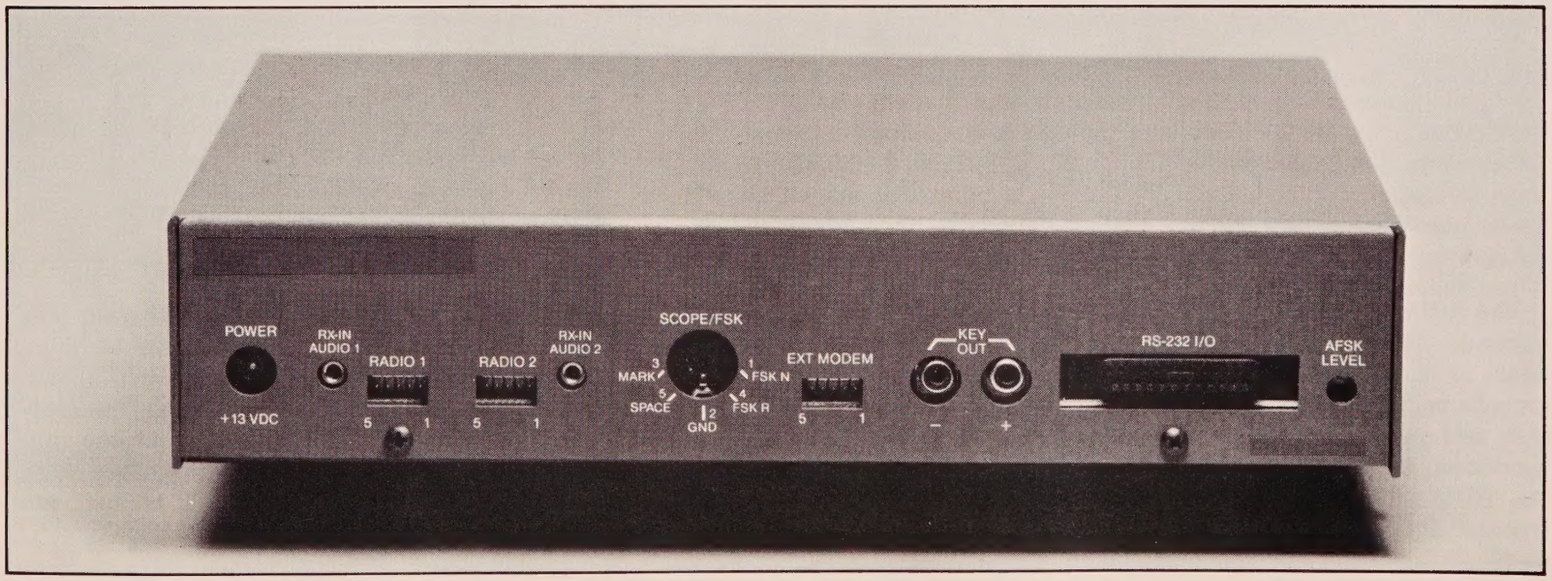
• UNIQUE HOST MODE
Only AEA's PK-232 offers a true Host mode for programmers and software providers. New applications are now being created to provide users additional features and modes that are possible ONLY with the PK-232!

• EXTERNAL AFSK LEVEL ADJUSTMENT
PK-232's rear-panel control permits easy, rapid continually-variable adjustment of AFSK output levels for the wide range of radios used for CW, RTTY and data transmission. Adjust modulation and deviation without opening either your radio or your controller!

• INDEPENDANT MARK-HIGH AND SPACE-HIGH FSK AND OSCILLOSCOPE OUTPUTS
The PK-232's accessory port permits isolated connections to your HF radio's FSK input and your oscilloscope. Mark-high and Space-high FSK keying and scope outputs are available on a separate connector. Internal jumper changes are not required.

• SOLID · STATE KEYING CIRCUITS
Solid-state keying circuits provide separate positive and negative CW key outputs. Dot-dash ratios remain constant at high keying speeds. Key bounce typically found in some reed relay circuits is eliminated.

• SOFTWARE RESET
Keyboard command permits system RAM reset to factory defaults without opening the unit or moving jumpers.



AMATEUR NET PRICE

$329.95

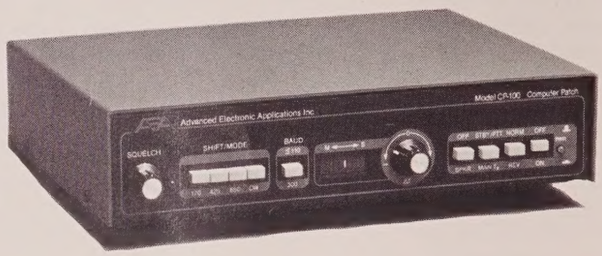
AEA retail $369.95

CP-100 Computer Patch™

The RTTY Terminal Unit DXers Choose

The Computer Patch CP-100 Interface is a complete terminal unit for Morse, Baudot, ASCII, and AMTOR. It will interface a computer running communications software via TTL levels (RS-232 optional) to your radio. AEA has the MBA-TOR program for use with the Commodore 64, and two similiar programs for use with Apple and IBM computers.

The tuning indicator is a ten segment bargraph featuring discriminator-type operation which graphically shows selective fading and is IDEAL for AMTOR use (tuning scope outputs are also available). The CP-100 also features a front panel squelch control which inhibits data to the computer when no signal is present, preventing print when receiving noise. Front panel selection of 110 and below or 300 baud operation is provided, along with an internal monitor speaker. With the optional current loop provisions the CP-100 can be used with a mechanical teleprinter. The CP-100 is housed in an attractive metal case, minimizing any potential RF interference effects.



Specifications

Front Panel Controls/Indicators
- Bargraph Tuning Indicator—10 segment—Discriminator Style
- Shift (170, 425, 850, CW)—Pushbutton
- Power On/Off—Pushbutton
- Power Indicator—LED
- Squelch
- Baud Rate Switch
- Delta Frequency Tuning (Variable Shift)
- Speaker Switch
- Manual Transmit Switch
- Mark/Space Inversion Switch
- Power Switch
- Power LED

Rear Panel
- Coaxial Power Conector—Center Pin Positive
- TTL Computer Connector—5 pin Molex
- CW Plus/Minus Keying Outputs—RCA Jacks
- FSK Normal/Reverse Outputs—RCA Jacks
- AFSK Level Control—Screwdriver Pot
- Audio Input Connector—Miniature Phone Jack—3.5 mm
- Audio Output Connector—Miniature Phone Jack—3.5 mm
- Radio Cable Connector—PTT, AFSK—CB-4
- Scope Outputs (Mark/Space)—RCA Jacks
- Keying Input—¼ inch Phone Plug Jack
- Optional Current Loop Connector and RS-232 Connector

Filters
- Two four-pole (.5db ripple) Chebyshev Channel Filters Mark 2125; Space 2200 to 3125 Adjustable Shift Range 75-1000 Hz
- CW Filter—750 Hz Center, 180 Hz Bw
- Five Pole Post Detection Low Pass Filter

Input
- 5 mv to 5V RMS (Speaker off), 60db range, AGC
- 5 mv to 1.5 V RMS (Speaker on)
- 10 k ohms input impedance (Speaker off); 8 ohms (Speaker on)
- Computer I/O—Industry Standard 5 pin TTL RS-232 Optional

Power
- 12-16 VDC, 300 ma

Output
- AFSK 2125 Mark, 2295, 2250, 2975 Space for 170, 425 850 shift Amplitude 5 to 100 mv, adjustable Impedance 600 ohms
- Keying: Positive and Negative RCA Plugs
- FSK: Open collector - Normal and Reverse
- Scope: Mark and Space Filter Outputs
- PTT: Plus and Minus, Internally Selectable
- To Computer: Industry Standard 5 Pin TTL
- Current Loop 20 to 60 ma, optional

Physical
- Metal Case, 11 x 8 x 2.5 inch, 48 oz.

MBA-TOR 64

Amateur Net Price $99.95

AEA Retail $119.95

The MBA-TOR 64 program is a user friendly software package for transmission/reception of Morse, Baudot, ASCII, and AMTOR. Options of the menu driven program include split screen display, type ahead buffer, QSO buffer, disk and cassette storage of QSOs, printer output, editing functions, and much more. The MBA-TOR package includes the ROM cartridge, computer cable, keyboard overlays, manual, and is compatible with the Commodore 64, 128, and 64-C.

SWL-TEXT 64

Amateur Net Price $99.95

AEA Retail $119.95

The SWL-TEXT program is receive only software with special features developed for the shortwave listening enthusiast. Tracking digital signals can be exciting with features like timing analysis, bit inversion and transposition, Russian RTTY, Russian and Japanese Morse, and much more. The SWL-TEXT package includes the ROM cartridge, computer cable, keyboard overlays, manual, and is compatible with the Commodore 64, 128, and 64-C.

MU-64 Morse University™

Makes Learning Morse Code Easy and Fun

Amateur Net Price $39.95 AEA Retail $49.95

The Morse University program and a Commodore 64 computer can make learning Morse code easier than your ever thought. With the Learning Routine you'll learn the individual characters and numbers. The Proficiency Routine helps you increase your speed by generating random characters in groups. The Sending Analysis lets you check your fist by graphically displaying the characters you send using the keyboard function keys. You can even use your new skills to play the Receiving Game. A video game that shoots the antenna off your house with lightning bolts if you don't type in the characters sent.

The Morse University program is a ROM cartridge that plugs directly into the computer and does not require a disk drive. Morse University is compatible with the Commodore 64, 128, and 64-C

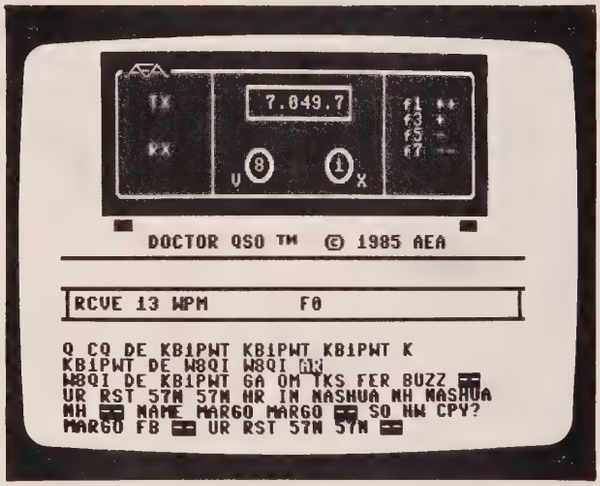
DQ-64 Doctor QSO™ Computer Simulated QSO Practice Software

Amateur Net Price $79.95 AEA Retail $99.95

Doctor QSO is a plug-in cartridge for the Commodore 64 computer that provides a very realistic simulation of on air two way Morse code ragchew contacts (QSOs). All Morse skill levels are addressed by Doctor QSO, from the person who has not yet learned the code, to the person comfortable with sending and receiving at 40+ WPM.

The operator can view the messages being sent by the computer generated stations in real time. The operator can also send Morse with the keyboard. In addition, the operator can select simulation of static interference (QRN) and adjacent CW interference (QRM).

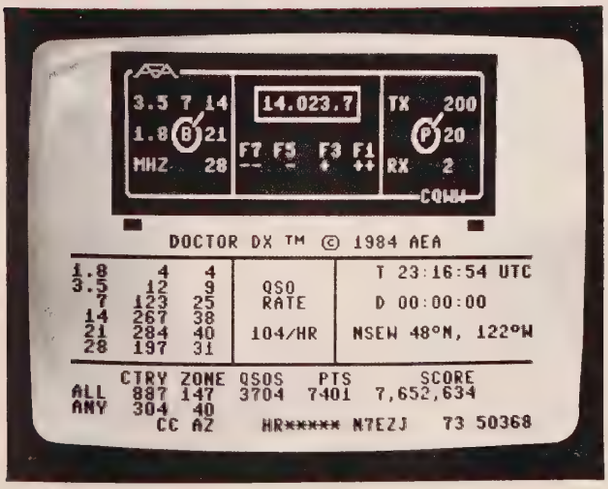
Doctor QSO is the perfect prescription for building your confidence before you make that first contact or if you just want to increase your speed and operating efficiency. Doctor QSO is compatible with the Commodore 64, 128, and 64-C.


TX
RX
7.049.7
DOCTOR QSO TM © 1985 AEA
RCVE 13 WPM F0
Q CQ DE KB1PWT KB1PWT KB1PWT K
KB1PWT DE W8QI W8QI GN
W8QI DE KB1PWT GA OM TKS FER BUZZ
UR RST 57M 57M HR IN NASHUA NH NASHUA
NH NAME MARGO MARGO SO NW CPY?
MARGO FB UR RST 57M 57M

Dr. QSO Operating Display Showing Controls, Frequency Display and Morse Monitor Mode Enabled.

DDX-64 Doctor DX™ The DX Contesters Training Program

Amateur Net Price $99.95 AEA Retail $119.95



Dr. DX Operating Display Showing Controls, Frequency Display, and QSO Progress Record.

The DDX-64 takes the mystery out of making CW contest contacts. It's easy to hook-up and operate and NO PREVIOUS COMPUTER KNOWLEDGE IS NECESSARY. All the stations you will work using Doctor DX are generated in the Commodore computer. As you tune up and down the band you have selected, you will hear realistic sounding stations in contact with other stations, plus QRN and QRM similiar to actual on the air condiditons. The typical two way contact exchange involves call letters, signal reports, CQWW zones (all explained full in the operators manual). Learning proper contest operating procedures and technique is a natural with the DDX-64. The DDX-64 is the ideal device for the ace contest operator to get in shape before the big weekend. Doctor DX is compatible with the Commodore 64, 128, and 64-C.

PM-1 Packet Modem

AMATEUR NET PRICE
$169.95
AEA Retail $199.95

Upgrade Your TNC for H.F. Packet Operation

The AEA PM-1 Packet Modem is designed to bring your current TNC up to AEA standards for H.F. Operation. The phase locked loop or "World Chip" demodulators (used in the TNC 2, PK-80, PK-87, PKT-1, TNC 1, and others) work well for VHF FM, but leave a lot of room for improvement in H.F. radio environments.

The PM-1 connects directly to your TNC and transceiver with NO INTERNAL MODIFICATIONS to either unit. The PM-1 contains independent dual channel filtering with A.M. detection for maximum sensitivity and selectivity under poor H.F. conditions. The PM-1 is optimized for 300 baud operation. A shift frequency of 200 Hz or 600 Hz may be selected from the front panel. A front panel bar graph tuning indicator is provided to assist the user in precise H.F. tuning of an incoming packet signal. There is also a front panel squelch control (variable DCD) provided for sensitivity adjustment under various noise conditions. To make your TNC as flexible as possible, we have included two output radio cables. Now you can switch between VHF and HF packet operation by simply pushing a front panel switch.

Enjoy Packet Radio to its fullest with the AEA PM-1 Packet Modem. Work DX on the low bands and monitor packet mail boxes from the other side of the country.

Specifications

TNC Connector
Pin 1
- Audio Output (To TNC RX In) 1200, 2200 Hz
  Nominally 180 mv rms

Pin 2
- Audio Input (From TNC TX Out) 1200, 2200 Hz
  15 mv to 5 v rms

Pin 3
- External Squelch

Pin 4
- Ground

Pin 5
- PTT Input

VHF Radio Connector
Connected to TNC connector when PM-1 power switch is off

HF Radio Connector
Active when PM-1 power switch is on
Pin 1
- Receive Audio 2110 (1710 Hz at 600 Hz shift)
  2310 Hz center frequencies, 15 mv to 1 v rms

Pin 2
- Transmit Audo 2110 (1710 Hz at 600 Hz shift)
  2310 Hz, 0 to 100 mv rms rear panel adjustable
  Active only during TNC PTT

Pin 3
- External Squelch - Connected to TNC pin 3
  when power switch is on

Pin 4
- Ground

Pin 5
- HF Transmitter PTT - Also selected by PM-1 power switch

HF Receive Demodulator
Two 4 pole Chebyshev .5 db ripple channel filters followed by twin full wave detectors and an automatic threshold corrector. Followed by a 2 pole Chebyshev low pass filter to enhance weak signals.

Power Requirements
12 to 15 VDC at 200 ma. (not supplied)

Physical
6" x 2" x 10", 2 lbs. 8 oz.

Accessories

AC -1 Power Adapter
Amateur Net Price $14.95
AEA Retail $19.95

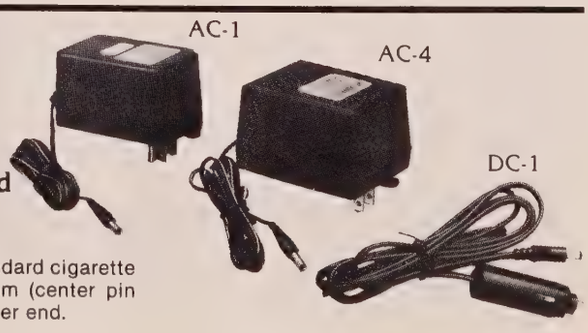
The AC-1 nominal 12 VDC wall adapter is a suitable power supply for all AEA products requiring 12 VDC at 600 ma or less current. The AC-1 comes with a six foot power cord and a standard 2.1 mm (center pin positive) coaxial power plug that mates with all AEA products. The AC-1 can also be used for any load requiring filtered, but unregulated nominal 12 VDC at 600 ma or less.

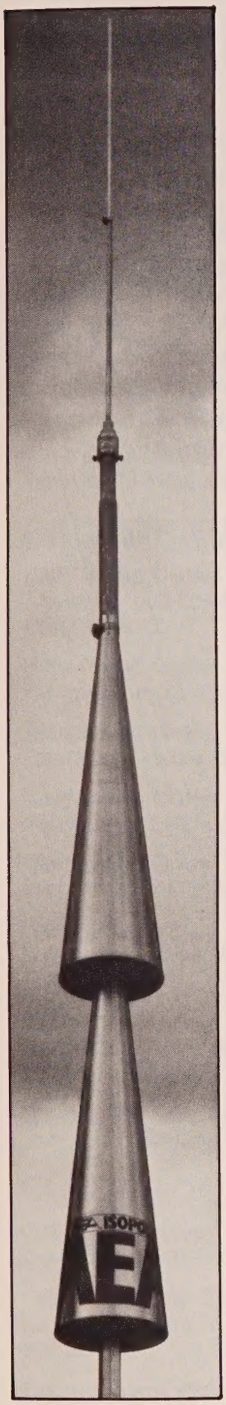
AC-4 Power Adapter
Amateur Net Price $25.00
AEA Retail $29.95

Same as AC-1 except 1 amp output.

DC-1 Cigarette Lighter Cord
Amateur Net Price $5.95
AEA Retail $6.95

The DC-1 is a fused cable with a standard cigarette lighter plug on one end and a 2.1 mm (center pin positive) coaxial power plug on the other end.



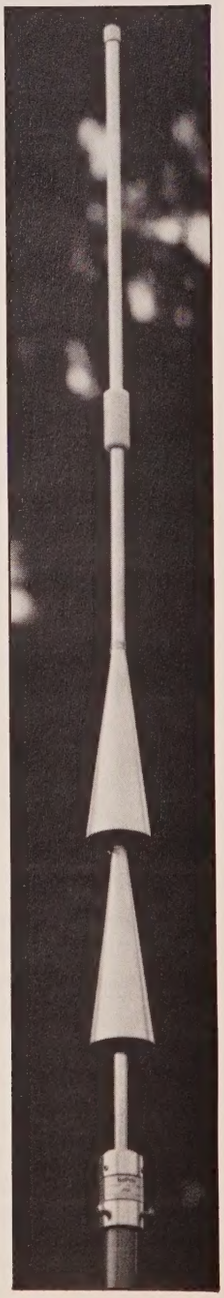


Improve VHF/UHF Performance with the IsoPole™ Antennas

Outstanding mechanical and electronic design makes the IsoPole the only logical choice for a VHF base station, especially for Packet operation. All Isopole antennas yield the maximum on the horizon gain attainable for their respective lengths. Exceptional decoupling from the feed line results in simple tuning and a significant reduction in TVI potential. The Isopole also significantly reduces the potential for computer RF hash pickup on the coax outside shield surface. The IsoPole antennas are all impedance matched in the factory so no field tuning is required.

The Isopoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other, when used with SWR protected solid state tranceivers. Typical SWR is 1.4 to 1 or better across the entire band. A standard 50 Ohm SO-239 connector is recessed within the base sleeve (fully weather protected). With the IsoPole you will not experience aggravating deviation in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is not supplied).

ISO 144
ISO 220



ISO 440

Specifications

MODEL	144	220	440
Freq. Coverage (Mhz)	135-160	210-230	415-465
Impedance	50 Ohm	50 Ohm	50 Ohm
2.1 VSWR bandwidth	>12Mhz @ 146Mhz	>15Mhz @ 220Mhz	>22Mhz @ 435Mhz
Power Rating	1 kw	1 kw	1 kw
Gain* (actual measurement)	3 dbd	3 dbd	3 dbd
Radiating Element Length	125.5" (3.2m)	79.25" (2m)	46" (1.2m)
Wind Area	< 1 sq. ft.	< .75 sq. ft.	< .20 sq. ft.
Maximum Mast OD	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)
Minimum Mast Length**	8 ft. (2.4m)	5½ ft. (1.6m)	6" (150mm)
Shipping Weight	5lbs.	4 lbs.	2.5 lbs.
Coax Connector	PL 259	PL 259	Type N
Amateur Net Price	$49.95	$49.95	$69.95
AEA retail price	$59.95	$59.95	$84.95

*dbd — db gain over a dipole in free space
**mast not included

AEA Amateur Ambassador Award - $1,000 Prize

AEA created the Amateur Ambassador Award in 1986 in an effort to recognize amateurs who promote the amateur radio service to those outside the hobby. Our 1986 winner was Mary Duffield, WA6KFA, a retired telecommunications educator from Santa Cruz, California. The work WA6KFA has done involving young people with computers and amateur radio is well documented. As co-chair of the Redwood Youth Foundation WA6KFA has influenced thousands of children and adults with projects ranging from international teleconferences to personal instruction.

AEA presented a check for $1000 and a certificate denoting the award to WA6KFA at the ARRL National Convention in San Diego.

AEA President N7ML presents AEA 1986 Amateur Ambassador Award to Mary Duffield WA6KFA.

1987 Amateur Ambassador Award Open for Nominations

The award will be judged on the following criteria:

1. Demonstrated dedication to the Amateur Radio Service.
2. Influence on those outside Amateur Radio
3. Initiation of special programs or projects to promote Amateur Radio.

Nominations for the 1987 AEA Amateur Ambassador Award are open from March 1 to May 31, 1987. During this time any licensed amateur can nominate any other licensed amateur for consideration. All nominations must be made on the official AEA Amateur Ambassador Award Nomination form which is available by writing AEA, P.O Box C-2160, Lynnwood, WA 98036. SASE Please.

A panel of judges selected by AEA will choose the winner and the decision of the judges is final.

The winner will receive a $1000 cash award and round trip air fare, hotel, and meals for presentation of the award at the ARRL National convention in Atlanta, GA on July 11. The goal of this award is to encourage all active amateur radio operators to promote and share amateur radio with others. Join with us in promoting the exciting world of amateur radio.

Write requesting your nomination form today.

Authorized Dealers — Ordering Information

AEA is represented by the finest amateur radio dealers in the U.S. These dealers offer the best prices on AEA products. The AEA Retail price is the cost for ordering the product direct from the factory. Washington residents add 7.8% sales tax. Factory direct orders also require $5.00 shipping and handling for U.S. orders, foreign orders please send inquiry for shipping and handling costs. The Amateur Net price is the advertised price for purchase through most of our Authorized Dealers. Please contact one of the dealers listed below to purchase AEA products.

ARIZONA

Ham Radio Outlet
Phoenix, 602/242-3515

Pace Engineering
Tucson, 602/888-3333

CALIFORNIA

Ham Radio Outlet
Anaheim, 800/854-6046
714/761-3033

Ham Radio Outlet
Burlingame, 415/342-5757

Ham Radio Outlet
Oakland, 415/534-5757

Ham Radio Outlet
San Diego, 619/560-4900

Ham Radio Outlet
Van Nuys, 818/988-2212

Henry Radio
Los Angeles, 800/421-6631
213/820-1234

Jun's Electronics
Culver City, 213/390-8003
800/882-1343

Quement Electronics
San Jose, 408/998-5900

COLORADO

C.W. Electronics
Denver, 303/832-1111

Colorado Radio Center
Denver, 303/288-7373
800/227-7373

DELAWARE

Delaware Amateur Supply
New Castle, 302/328-7728
800/441-7008

FLORIDA

Amateur Electronic Supply
Clearwater, 813/461-4267

Amateur Electronic Supply
Orlando, 305/894-3238
800/327-1917

Eli's Amateur Radio Inc.
Ft. Lauderdale, 305/525-0103

Mike's Elec. Dist. Co.
Ft. Lauderdale, 305/491-7110

Quad Elec
Pensacola, 904/438-3319

GEORGIA

Britt's 2 Way Radio
Smyrna, 404/432-8006

Doc's Communications
Rossville, 404/866-2302

Ham Radio Outlet
Atlanta, 404/263-0700

HAWAII

Honolulu Elec
Honolulu, 808/949-5564

IDAHO

Ross Distributing Co.
Preston, 208/852-0830

ILLINOIS

Erickson Communications
Chicago, 800/621-5802
312/631-5181

Floyd Electronics
Collinsville, 618/345-6448

INDIANA

Ham Station (The)
Evansville, 812/422-0231
800/523-7731

KANSAS

Amateur Radio Equipment Co.
Wichita, 316/264-9166

MASSACHUSETTS

Tel-Com Inc.
Littleton, 617/486-3400

MICHIGAN

Den-Tronics
Flushing, 313/659-1776

Michigan Radio
Mt. Clemens, 313/469-4656

MINNESOTA

TNT Radio
Robbinsdale, 612/535-5050

MISSOURI

Missouri Radio Center, Inc.
Kansas City, 816/741-8118
800/821-7323

MISSISSIPPI

Hooper Electronic Supply
Biloxi, 601/432-0584

NEW HAMPSHIRE

Rivendell Electronics
Derry, 603/434-5371

NEW JERSEY

KJI Electronics
Cedar Grove, 201/239-4389

NEVADA

Amateur Electronic Supply
Las Vegas, 800/634-6227
702/647-3114

Reno Radio
Sparks, 702/331-7373
800/345-5686

NEW YORK

Barry Electronics
New York, 212/925-7000

VHF Communications
Jamestown, 716/664-6345

NORTH CAROLINA

Doc's Communication
Charlotte, 704/523-7003

Williams Radio Sales
Colfax, 919/993-5881
800/523-0347

OHIO

Amateur Electronic Supply
Wickliffe, 216/585-7388
800/321-3594

R & L Electronics
Hamilton, 513/868-6399

Universal Amateur Radio
Reynoldsburg, 614/866-4267

OREGON

Antronics of Oregon
Aloha, 503/642-7373

Portland Radio Supply Co.
Portland, 503/228-8647

PENNSYLVANIA

Ham Store (The)
State College, 814/238-3798

Hamtronics
Trevose, 215/357-1400

SOUTH DAKOTA

Burghardt Amateur Center
Watertown, 605/886-7314

TENNESSEE

Memphis Amateur Radio
Memphis, 800/238-6168
901/683-9125

TEXAS

Austin Amat. Radio Supply
Austin, 512/454-2994
800/423-2604

Electronic Center, Inc.
Dallas, 214/526-2023

Kennedy Associates
San Antonio, 512/333-6110

Madison Electronics
Houston, 800/231-3057
713/520-7300

Stephens Electronics
Corpus Christi, 512/991-6789

Texas Comm Center
Houston, 713/957-8011
800/227-8011

Texas Towers
Plano, 214/422-7306
800/272-3467

Valley Radio Center
Harlingen, 512/423-6407

VIRGINIA

Electronic Equipment Bank
Vienna, 703/938-3350
800/368-3270

WASHINGTON

ABC Communications
Seattle, 206/364-8300

Amateur Radio Supply
Seattle, 206/767-3222

C-Comm
Seattle, 800/426-6528
206/784-7337

Wanzer Company
Spokane, 509/928-3073

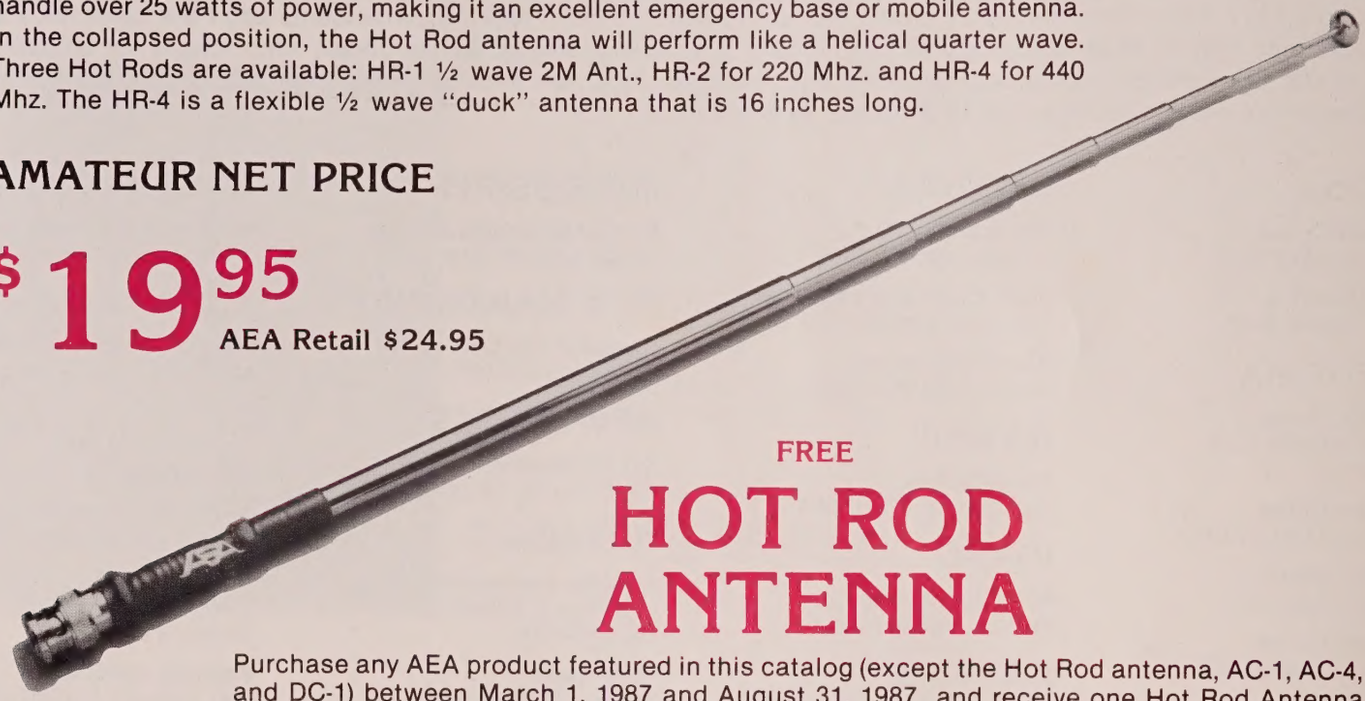
WISCONSIN

Amateur Electronic Supply
Milwaukee, 800/558-0411
414/442-4200

AEA HOT ROD™

High Performance Hand-Held Antenna

The Hot Rod antenna makes the same improvement to hand-held communications that the IsoPole antennas have made to base station operation. Achieve 1 or 2 db gain over ANY 5/8 wave two meter telescopic antenna. The factory tuned HR-1 is 20% shorter, lighter and places far less stress on your hand-held connector and case. It will easily handle over 25 watts of power, making it an excellent emergency base or mobile antenna. In the collapsed position, the Hot Rod antenna will perform like a helical quarter wave. Three Hot Rods are available: HR-1 ½ wave 2M Ant., HR-2 for 220 Mhz. and HR-4 for 440 Mhz. The HR-4 is a flexible ½ wave "duck" antenna that is 16 inches long.



AMATEUR NET PRICE

$19.95

AEA Retail $24.95

FREE

HOT ROD ANTENNA

Purchase any AEA product featured in this catalog (except the Hot Rod antenna, AC-1, AC-4, and DC-1) between March 1, 1987 and August 31, 1987 and receive one Hot Rod Antenna FREE. Fill in the coupon and return it WITH THE WARRANTY CARD OF THE PRODUCT PURCHASED AND A COPY OF THE SALES RECEIPT to AEA. All requests must be postmarked before September 1, 1987. THIS OFFER GOOD ONLY IN THE UNITED STATES. Allow 6 to 8 weeks for delivery.

Please type or print. This is your mailing label. Circle one HR-1 HR-2 HR-4

Name_____ Call_____

Address_____

City_____ State_____ Zip_____

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